



FAA-HDBK-008
February 4, 2011

FEDERAL AVIATION ADMINISTRATION HANDBOOK

Using FAA Standards to Describe and Register Web Services

**This handbook is for guidance only.
Do not cite this document as a requirement.**

Foreword

This Handbook is approved for use by all departments of the Federal Aviation Administration (FAA).

This Handbook describes processes for defining, documenting and registering [Web service metadata](#) (information about Web services) in a standard and uniform way. It outlines procedures for initiating, developing, seeking approval of, registering and maintaining FAA Web services metadata.

This Handbook augments and provides further guidance for using several related FAA Standards that together define FAA's requirements for describing and registering services. These include:

- *XML Namespace* ([FAA-STD-063](#))
- *Web Service Registration* ([FAA-STD-064](#))
- *Preparation of Web Service Description Documents* ([FAA-STD-065](#))
- *Web Service Taxonomies* ([FAA-STD-066](#))

This Handbook has been developed in accordance with [FAA-STD-069](#) *Preparation of Handbooks* (December 2009). Comments, suggestions, or questions on this document should be addressed to the [FAA Data Governance Board](#) (FDGB), Office of Information Management, 800 Independence Avenue, S.W., Washington, D.C. 20591.

Table of Contents

1	Scope	1
1.1	Scope.....	1
1.2	Intended Audience.....	1
1.3	Background.....	1
1.4	Change Record.....	3
2	Applicable References.....	3
2.1	FAA Documents.....	3
2.2	Non-FAA Government Documents	3
2.3	Non-Government Documents	3
3	Definitions and Acronyms	4
3.1	Terms and Definitions.....	4
3.2	Abbreviations.....	8
4	General Guidance	10
5	Detailed Guidance	12
5.1	Establish Namespaces	12
5.1.1	Develop Namespaces.....	12
5.1.1.1	Develop Organization Namespaces.....	13
5.1.1.2	Develop Web Service Namespaces.....	14
5.1.1.3	Develop Taxonomy Namespaces	14
5.1.2	Register Namespaces in the FAA Data Registry	15
5.2	Develop Taxonomies	17
5.2.1	Register Taxonomies in the FAA Data Registry (Optional).....	18
5.2.2	Establish Taxonomies in a Service Registry	19
5.3	Publish the Service in a Service Registry	20
5.4	Develop the Web Service Description Document	22
6	Notes.....	25
	Appendix A. Service Provider Checklist	26
	Appendix B. Namespaces Registered in FDR as of January 13, 2011.....	28
	Appendix C. Example of URN Naming Convention	30
	Appendix D. FDR Namespace Registration Form	36
	Appendix E. FDR Standardization Process Overview	39
	Appendix F. Taxonomy Registration Form	41

List of Figures

Figure 1.	Conceptual View of a SOA-Based System.....	2
Figure 2.	High-Level Use Case Diagram	10
Figure 3.	Establish Namespaces Use Case Diagram.....	12
Figure 4.	Develop Taxonomies Use Case Diagram.....	17
Figure 5.	Publish Service in Service Registry Use Case Diagram.....	20
Figure 6.	Develop Web Service Description Document Use Case Diagram.....	22
Figure 7.	Correlations between Sections of WSDD and WSDL Schema Elements.....	23
Figure 8.	Conceptual Mapping between Service Registry Metadata and WSDD Content.....	24

1 Scope

1.1 Scope

This Handbook provides a set of guidelines and recommendations for collecting and presenting the minimum required set of [metadata](#) needed for describing and registering FAA [Web services](#) that has already been set forth in FAA Standards [063](#), [064](#), [065](#), and [066](#). This Handbook gives users a process-oriented view on how and when to develop the metadata and register it in [FAA-affiliated service registries](#) and the [FAA Data Registry](#) (FDR). [Service providers](#) should use the Handbook in conjunction with the standards to help ensure that their [service descriptions](#) meet FAA's requirements by being complete, well and consistently written, and properly registered.

This Handbook does not explain or describe how to design a Web service or Web [service registry](#), nor does it specify or suggest any technological solutions for implementing a Web service or Web service registry.

This Handbook does not suggest or endorse any specific configuration management and governance policies. Such policies and guidance are expected to be provided by the program offices responsible for implementing [service-oriented architectures](#) (SOA). Individual program offices may wish to extend this Handbook to accommodate their specific policies.

This Handbook is for guidance only and cannot be cited as a requirement.

1.2 Intended Audience

This Handbook is intended to be used by those individuals who will play a role in Web services development and registration, namely managers, architects, service registry implementers, service providers, and [service registry administrators](#). Some knowledge of Web service technology is assumed.

1.3 Background

With initiatives like Next Generation Air Traffic Systems (NEXTGEN), System-Wide Information Management (SWIM), Aviation Safety SOA Environment (ASE) and others, FAA has begun to transition its current information systems to operate within a net-centric environment. In FAA, the net-centric paradigm is realized by implementing a service-oriented architecture (SOA) to integrate previously incompatible systems and to consolidate and reuse heterogeneous systems and data structures.

Web services, the primary subject of this Handbook, are [services](#) that can be invoked through the [Internet](#). More specifically, a Web service is a software system identified by a [Uniform Resource Identifier](#) (URI), whose public [interfaces](#) and [bindings](#) are defined and described using XML-based standards, and whose definition can be discovered by other software systems through the use of a service registry.

NOTE: The words "service" and "Web service" are used interchangeably throughout the Handbook.

The work presented in the Handbook is largely based on the notion that instead of visualizing a SOA-based component (e.g. a service or registry) as an independently established software unit, "it is perhaps more productive to think of it as [part of] an ecosystem: a space where people, machines and services inhabit in order to further both their own objectives and the objectives of the larger community." [14] [Figure 1](#) depicts such a conceptual view of a SOA-based system as "a network of independent services, machines, the people who operate, affect, use, and govern those services" as well as the relationships among its parts. Adopting the notion of SOA as ecosystem should greatly assist in comprehension of this Handbook.

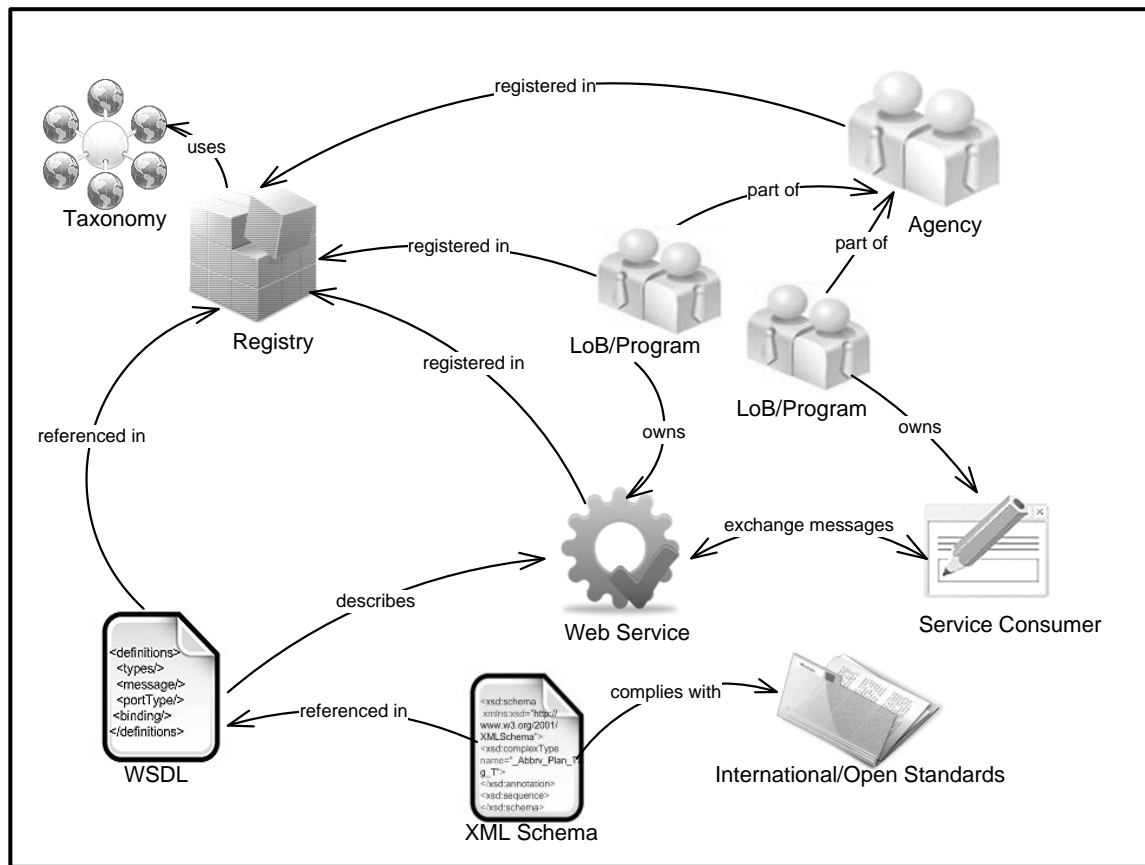


Figure 1. Conceptual View of a SOA-Based System

All of the information needed to describe, [categorize](#), register, and manage a Web service is collectively referred to in this Handbook as *service metadata*. To ensure that services within FAA operate effectively, standards for describing metadata consistently and uniformly are needed for the following reasons:

- To promote both syntactic and [semantic interoperability](#) by avoiding ambiguity in terminology, shared [semantics](#), [resource](#) identification, etc.
- To support registration and other processes that enable FAA registries to share and exchange their contents to facilitate service [discovery](#)
- To ensure complete and consistent service descriptions
- To provide sets of both human-understandable and machine-processable vocabularies for Web service metadata.

In September 2007, the [FAA Data Governance Board](#) (FDGB) used its authority under [FAA Order 1375.1D](#) to set up a Service Registry Working Group (SRWG) charged with developing a set of standards and guidelines to meet those needs. To date, the SRWG has published four standards:

- *XML Namespaces* ([FAA-STD-063](#)) specifies requirements for creating and establishing FAA [namespaces](#) used in XML documents. These namespaces are *globally unique identifiers* used to qualify the names of SOA entities, allowing them to be referenced unambiguously across different applications and artifacts.

- *Web Service Registration* ([FAA-STD-064](#)) contains the requirements for registering services. It specifies the minimum acceptable content for documenting services within the FAA.
- *Preparation of Web Service Description Documents* ([FAA-STD-065](#)) specifies the requirements for developing a Web Service Description Document (WSDD).
- *Web Service Taxonomies* ([FAA-STD-066](#)) specifies the minimum set of [taxonomies](#) for categorizing services metadata.

1.4 Change Record

Not applicable.

2 Applicable References

2.1 FAA Documents

- [1] FAA Enterprise Architecture, 18 February 2010
http://www.faa.gov/about/office_org/headquarters_offices/aio/programs/itrd/enterprise_architecture/
- [2] FAA Order 1375.1D, Information/Data Management, 25 July 2006
<http://www.faa.gov/documentLibrary/media/Order/1375.1D.pdf>
- [3] FAA-STD-063, XML Namespaces, 1 May 2009
http://www.faa.gov/air_traffic/nas/system_standards/
- [4] FAA-STD-064, Web Service Registration, 1 May 2009
http://www.faa.gov/air_traffic/nas/system_standards/
- [5] FAA-STD-065: Preparation of Web Service Description Documents, 26 February 2010
http://www.faa.gov/air_traffic/nas/system_standards/
- [6] FAA-STD-066: Web Service Taxonomies, 26 February 2010
http://www.faa.gov/air_traffic/nas/system_standards/
- [7] FAA-STD-069: Preparation of Handbooks, 4 December 2009
http://www.faa.gov/air_traffic/nas/system_standards/
- [8] NAS System Engineering Manual: Version 3.1:06/06/06
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/operations/syngsaf/seman/
- [9] FAA-HBDBK-007, FAA Data Standardization, 4 January 2008
http://www.faa.gov/air_traffic/nas/system_standards/handbooks/

2.2 Non-FAA Government Documents

Not applicable.

2.3 Non-Government Documents

- [10] ISO/IEC 11179, Information Technology – Metadata Registries, Parts 1-6, Edition 2 Published January 2005 <http://metadata-standards.org/11179/>
- [11] DCMI Glossary, Dublin Core Metadata Initiative, User Guide Committee, 7 November 2005 <http://dublincore.org/documents/usageguide/glossary.shtml>
- [12] OMG Unified Modeling Language™ (OMG UML), Superstructure Version 2.2, 2 February 2009 <http://www.omg.org/spec/UML/2.2/Superstructure/PDF/>

- [13] RFC 2141 URN Syntax, Network Working Group, May 1997
<http://www.rfc-editor.org/rfc/rfc2141.txt>
- [14] OASIS Reference Architecture for Service Oriented Architecture v. 1.0: Public Review Draft 1: April 2008 <http://docs.oasis-open.org/soa-rm/soa-ra/v1.0/soa-ra-pr-01.pdf>
- [15] Web Services Architecture: W3C Working Group Note, 11 February 2004
<http://www.w3.org/TR/2004/NOTE-ws-arch-20040211>
- [16] Web Service Description Requirements, W3C Working Draft, J. Schlimmer, 28 October 2002 <http://www.w3.org/TR/2002/WD-ws-desc-reqs-20021028/>

3 Definitions and Acronyms

3.1 Terms and Definitions

<u>TERM</u>	<u>DEFINITION</u>	<u>APPEARS IN</u>
<i>Administrator</i>	See Service Registry Administrator .	STD-064
<i>Binding</i>	An association between an interface , a concrete protocol and a data format . A binding specifies the protocol and data format to be used in transmitting messages defined by the associated interface. [16]	STD-064, STD-065
<i>Business Function</i>	A characteristic action or activity that needs to be performed to achieve a desired objective. [8]	STD-065
<i>Categorization</i>	The process of classifying or assigning items into categories or groups based on characteristics which the items have in common.	STD-066
<i>Discovery</i>	The processes through which a service consumer may search for and find services , (generally done by providing criteria to search for against a corpus of service metadata which service providers have provided to describe their services).	STD-065
<i>Domain</i>	A collection of elements and services , administered in a coordinated fashion.	STD-064, STD-066
<i>Effect</i>	A state or condition that results from interaction with a service . Multiple states may result depending on the extent to which the interaction completes successfully or generates a fault .	STD-065
<i>Entity</i>	An instance of a persistent data structure inside a registry that represents a particular and discrete unit of information.	STD-064, STD-066
<i>FAA Business Context (FBC)</i>	A designation of the FAA business function or information subject area that the XML artifact supports and that is consistent with the FAA Enterprise Architecture .	STD-063
<i>FAA Business Context Identifier (FBCI)</i>	A string of characters that uniquely identifies an FAA Business Context .	STD-063

FAA Data Governance Board (FDGB)	The body responsible for creating and administering the agency-level processes needed to promote and sustain successful data management practices in the FAA's emerging net-centric environment, developing and coordinating data exchange standards, and maintaining the corporate data management tools and services. [2]	STD-063
FAA Data Registry (FDR)	The official source of the FAA's data standards. The FDR (http://fdr.gov/fdr/Home.jsp) is a web-enabled system that provides ready access to the agency's standards and is compliant with the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) Standard 11179. [2]	STD-063, STD-066
FAA Enterprise Architecture	The operational and technical framework for all capital assets of the FAA. It describes the agency's current and target architectures, as well as the transition strategy for moving from the current to the target architecture. The enterprise architecture [1] is approved annually by the Joint Resources Council in support of FAA budget and strategic management processes. The enterprise architecture has three segments: the NAS architecture, the NAS regulatory architecture, and the non-NAS architecture. The Chief Information Officer has responsibility for maintaining the enterprise architecture. The Chief Operating Officer of the Air Traffic Organization (ATO) is delegated responsibility to develop and implement the NAS architecture.	STD-063
FAA-Affiliated Registry	An FAA service registry that implements sharing of information with other registries within the FAA.	STD-064, STD-066
FDR Registrar	A person or group who administers the FAA Data Registry . The registrar provides advice on namespace or taxonomy registration procedures and is responsible for namespace registration functions.	STD-063
Fault	A condition that causes a functional unit to fail to perform its required function.	STD-065
Format	The physical or digital manifestation of the resource . Typically, Format may include the media-type or dimensions of the resource. Examples of dimensions include size and duration. [11]	STD-066
Identifier	A sequence of characters, capable of uniquely identifying that with which it is associated, within a specified context. [10]	STD-066
Information Architect	A person or group who expresses a model or concept of information into a coherent structure that most people can understand quickly.	
Interface	A logical grouping of operations . An Interface represents an abstract Web service type, independent of transmission protocol and data format . [16]	STD-065

Internet	A large, heterogeneous collection of interconnected systems that can be used for communication of many different types between any interested parties connected to it. The term includes both the "core Internet" (internet service provider networks) and "edge Internet" (corporate and private networks, often connected via firewalls, network address translation boxes, application layer gateways and similar devices).	STD-064
Key	A unique token used to identify and refer to an entity stored in a registry .	STD-064, STD-066
Message	A basic unit of communication from one web software agent to another sent in a single logical transmission.	STD-065
Metadata	Data that defines or describes other data. [10]	STD-063, STD-064, STD-065, STD-066
Namespace	A collection of names, identified by a URI reference, that are used in XML documents as element types and attribute names. The use of XML namespaces to uniquely identify metadata terms allows those terms to be unambiguously used across applications, promoting the possibility of shared semantics . [11]	STD-063, STD-064, STD-066
Open Standard	A recognized national or international platform-independent standard that is developed collaboratively through due process, is vendor neutral, and does not rely on commercial intellectual property.	STD-065
Operation	A set of messages related to a single Web service action. [16]	STD-065
Organization	A unique framework of authority within which a person or persons act, or are designated to act, towards some purpose. Any department, service or other entity within an organization which needs to be identified for information exchange.	STD-064, STD-065, STD-066
Precondition	A state or condition that is required to be true before an action can be successfully invoked.	STD-065
Protocol	A formal set of conventions governing the format and control of interaction among communicating functional units.	STD-065
Publish	The act of placing one or more entities in a registry by invoking one of the publication APIs.	STD-064, STD-066
Resource	An object of information that is available on an internet and identified by a unique Uniform Resource Identifier .	STD-064, STD-066
Semantic Interoperability	Ability to search for digital information across heterogeneous distributed databases whose metadata schemas have been mapped to one another. It is achieved through agreements about content description standards; for example, Dublin Core, Anglo-American Cataloging Rules. [11]	STD-066
Semantics	A conceptualization of the implied meaning of information that requires words and/or symbols within a usage context.	STD-065
Service	An implementation-independent reusable operational function that may be discovered as self-describing interfaces , and invoked using open standard protocols across networks. See also Web service .	STD-064, STD-065, STD-066

Service Description	The information needed in order to use, or consider using, a service .	STD-065
Service Provider	An organization that offers the use of capabilities by means of a service .	STD-065
Service Registry	An enabling infrastructure that uses a formal registration process to store, catalog, and manage metadata relevant to the services . A registry supports the search, identification, and understanding of resources , as well as query capabilities.	STD-064, STD-065, STD-066
Service Registry Administrator	A person or group who sets the policies for a registry and is responsible for service registration functions and registry operations.	STD-064, STD-066
Service-Oriented Architecture (SOA)	A paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains . It provides a uniform means to offer, discover , interact with and use capabilities to produce desired effects consistent with measurable preconditions and expectations.	STD-064, STD-065
Software Agent	A running program that drives Web services , both to implement them and to access them. [15]	STD-064, STD-065
Taxonomy	A controlled list of values by which to categorize or classify objects.	STD-064, STD-065, STD-066
Taxonomy Developer	A person or group who is knowledgeable in creating taxonomies , content classification, and controlled vocabularies with a hierarchical structure or categorization .	
Uniform Resource Identifier (URI)	A compact string of characters for identifying an abstract or physical resource .	STD-063, STD-064, STD-066
Uniform Resource Name (URN)	A name that is intended to serve as a persistent, location-independent, resource identifier. [13]	STD-063
Use Case	The specification of a set of actions performed by a system, which yields an observable result that is of value for one or more actors or other stakeholders of the system. [12]	
Web Service	A self-describing, self-contained, modular unit of software application logic that provides defined business functionality. Web services are consumable software services that typically include some combination of business logic and data. [2]	STD-064, STD-065, STD-066
Web Service Description Document (WSDD)	A document that contains the details needed to sufficiently describe a Web service as a part of FAA's implementation of Service Oriented Architecture (SOA). The WSDD provides a set of human-understandable information about a Web service that can be employed in various settings and artifacts. Requirements for developing a WSDD are contained in FAA-STD-065 .	STD-065

Web Service Description Language (WSDL)	An XML grammar for describing network services as collections of communication endpoints capable of exchanging messages. WSDL service definitions provide documentation for distributed systems and serve as a recipe for automating the details involved in applications communication. (http://www.w3.org/TR/wsdl)
--	---

3.2 Abbreviations

AMS	Acquisition Management System
API	Application Programming Interface
ASE	Aviation Safety SOA Environment
ATO	Air Traffic Organization
DCMI	Dublin Core Metadata Initiative
DOT	Department of Transportation
FAA	Federal Aviation Administration
FBC	FAA Business Context
FBCI	FAA Business Context Identifier
FDGB	FAA Data Governance Board
FDR	FAA Data Registry
ISO/IEC	International Organization for Standardization/International Electrotechnical Commission
ID	Identifier
LOB	Line of Business
NAS	National Airspace System
NCP	NAS Change Proposal
NEXTGEN	Next Generation Air Traffic Systems
OASIS	Organization for the Advancement of Structured Information Standards
OMB	Office of Management and Budget
OMG	Object Management Group
RFC	Request for Comment
SOA	Service-Oriented Architecture
SRWG	Service Registry Working Group
SWIM	System-Wide Information Management
UML	Unified Modeling Language
URI	Uniform Resource Identifier

<i>URN</i>	Uniform Resource Name
<i>W3C</i>	World Wide Web Consortium
<i>WSDD</i>	Web Service Description Document
<i>WSDL</i>	Web Service Description Language
<i>XML</i>	eXtensible Mark-up Language

4 General Guidance

This document is presented as a set of [use cases](#) (shown in [Figure 2](#)) that describe the tasks to be accomplished by various participants (stakeholders) in order to establish and maintain Web service metadata. Each use case (represented by an oval) has a number that corresponds to the number of a subsection in [section 5](#) that describes it in greater detail. The stick figures (“actors”) represent the participants. The lines represent interactions between stakeholders and use cases.

NOTE: Use cases are a means for specifying required usages of a system. Typically, they are used to capture the requirements of a system, that is, what a system is supposed to do. The key concepts associated with use cases are *actors*, *use cases*, and the *subject*. The subject is the system under consideration to which the use cases apply. The users and any other systems that may interact with the subject are represented as actors. Actors always model entities that are outside the system. The required behavior of the subject is specified by one or more use cases, which are defined according to the needs of actors. [\[12\]](#)

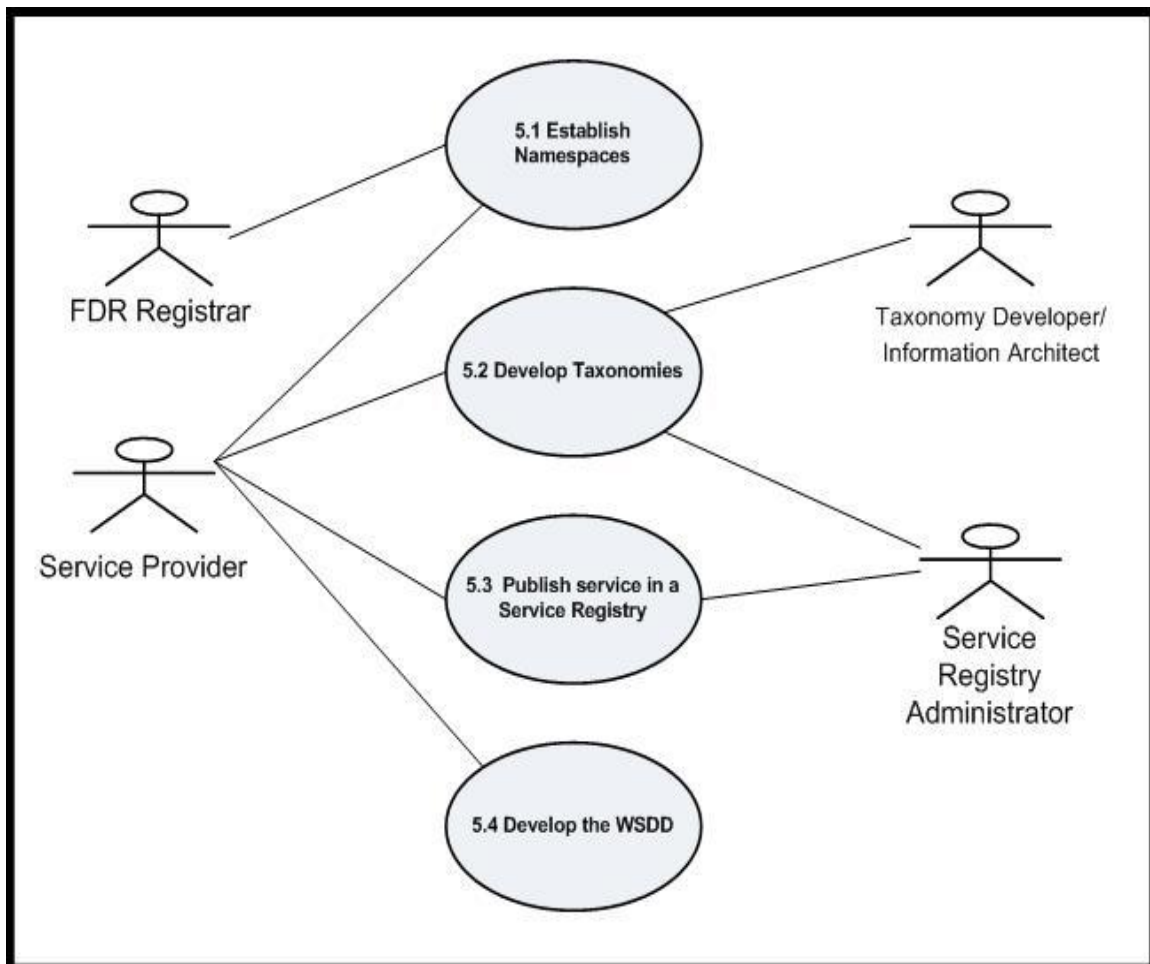


Figure 2. High-Level Use Case Diagram

Participants: [Service Provider](#), [Service Registry Administrator](#), [FAA Data Registry \(FDR\) Registrar](#), [Taxonomy Developer/Information Architect](#)

Preconditions: We assume these conditions have taken place before a Web service's metadata can be documented or registered.

- The service has been approved and funded according to Acquisition Management System (AMS) policies. See <http://fasteditapp.faa.gov/ams/Common/search.jsp> for more information.
- The service registry has been acquired or developed.
- A service registry administrator has been assigned and respective registration policies have been developed.
- The programs responsible for implementing net-centric environments have been deployed or are being developed.

Process: Individual use cases in [Figure 2](#) are briefly described as follows:

1. **Establish Namespaces.** The service provider, with the assistance of the FDR registrar, defines and registers in FDR the namespaces whose globally unique identifiers ([URIs](#)) are used to qualify the names of FAA entities relevant to the Web service. (See [section 5.1](#).)
2. **Develop Taxonomies.** The taxonomy developer/information architect documents the content and structure of taxonomies and provides them to the service registry administrator for installation in the service registry. (See [section 5.2](#)).
3. **Publish the Service in a Service Registry.** The service provider [publishes](#) the service in a service registry. (See [section 5.3](#)).
4. **Develop the WSDD.** The service provider develops and maintains the Web Service Description Document. (See [section 5.4](#)).

Effects: The Web service's metadata has been documented and registered in accordance with FAA standards.

NOTE: The sequence in which the above activities are performed depends on the registration and governance processes established by the program offices responsible for implementing services and service registries. [Appendix A](#) presents an informal service provider checklist intended to help the service provider approach the task of describing and registering a service.

5 Detailed Guidance

5.1 Establish Namespaces

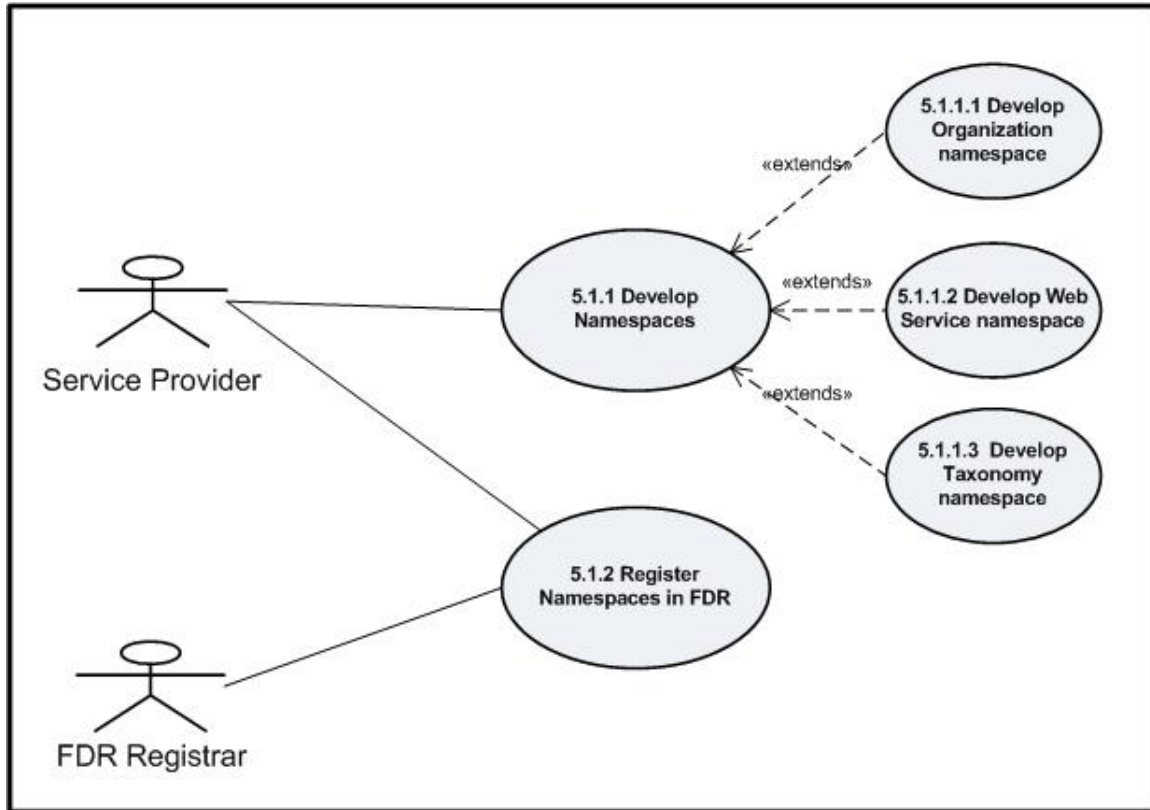


Figure 3. Establish Namespaces Use Case Diagram

Participants: [Service Provider](#), [FDR Registrar](#)

Preconditions: See [section 4 preconditions](#).

Process:

1. The service provider develops the namespace's metadata and submits it for registration in FDR. (See [section 5.1.1](#))
2. The FDR registrar performs the namespace registration function. (See [section 5.1.2](#))

Effects: The namespace conforms to FAA-STD-063 requirements and has been registered in FDR.

5.1.1 Develop Namespaces

Participants: [Service Provider](#), [FDR Registrar](#)

Preconditions: See [section 4 preconditions](#).

Process:

1. The service provider searches the FDR for a namespace whose identifying [URN](#) contains the hierarchy of [FAA business context identifiers](#) (FBCIs) down to the level that best represents the service provider's business [domain](#). For example:

urn:us:gov:dot:faa:atm

urn:us:gov:dot:faa:atm:enroute

[Appendix B](#) contains a list of namespaces registered to date in FDR. Contact the FDR registrar if assistance with searching FDR is needed.

NOTE: Contact information for the FDR registrar is provided at <http://fdr.gov>; click on "contacts" at the bottom of the screen.

2. If there is no namespace registered in FDR that is appropriate to the service provider's business domain, the FDR registrar works with the service provider to create and register one.

NOTE: The FDGB approves the [FBCIs](#) that form part of every FAA namespace's identifier.

3. If there is a namespace registered that is appropriate to the service provider's business domain, the service provider looks for other registered subordinate namespaces (e.g. "urn:us:gov:dot:faa:atm:enroute:2010:schemas") to make sure the namespace he or she plans to develop does not duplicate any of the existing ones. If one already exists, it cannot be duplicated and the service provider should use that one if doing so does not conflict with his or her needs. If there is a conflict, the service provider must create another.
4. With assistance from the FDR registrar as needed, the service provider creates and documents the new namespace according to FAA-STD-063. For [organization](#) namespaces, see [section 5.1.1.1](#). For Web service namespaces, see [section 5.1.1.2](#). For taxonomy namespaces, see [section 5.1.1.3](#).

NOTE: While FAA-STD-063 specifies the syntax for namespace identifiers, it does not specify rules for naming any hierarchical components beyond the FBCI portion of the URN, e.g. "urn:us:gov:dot:faa:atm:enroute:2010:schemas". An example of how an FAA organization might extend FAA-STD-063 by defining naming conventions that meet its specific needs is provided in [Appendix C](#).

Effects: The namespace conforms to FAA-STD-063 requirements and is ready to be registered in FDR.

5.1.1.1 Develop Organization Namespaces

Participants: [Service Provider](#)

Preconditions: See [section 4 preconditions](#). A namespace appropriate to the service provider's business domain has been registered in FDR.

Process:

1. The service provider determines whether the organization that owns the service (the "provider organization") has an associated namespace registered in FDR. If an organization namespace has not been registered, the service provider develops a namespace for it as follows:
2. The service provider determines the name of the organization.

NOTE: Ordinarily the full official name and acronym of the organization has already been established by the FAA. It is always preferable to use either the acronym or at least an abbreviated version of the full name to keep namespace strings relatively short.

3. Once the organization name is determined, the organization namespace's identifier is defined and placed within the business domain namespace. This is done by concatenating the business domain namespace with the organization's name. For example, if the organization's official name is "Office of Aerospace Medicine, Civil Aerospace Medical Institute" and the namespace of the business domain (Aviation Safety) is "urn:us:gov:dot:faa:avs", then the resulting organization namespace might be "urn:us:gov:dot:faa:avs:cam".

Effects: The namespace for the organization that owns the service has been developed.

5.1.1.2 Develop Web Service Namespaces

Participants: [Service Provider](#)

Preconditions: See [section 4 preconditions](#). A namespace for the provider organization has been registered in FDR.

Process:

1. The service provider determines whether the service has an associated namespace registered in the FDR. If a service namespace has not been registered, the service provider develops the namespace for the service as follows:
2. The service provider identifies the namespace assigned to the provider organization.
3. The service provider determines the name of the service.

NOTE: Ordinarily the full name and acronym of the service has already been established during the service's architectural design and/or modeling phase or upon approval of funding for the service. It is always preferable to use either the acronym or at least an abbreviated version of the full name to keep namespace strings relatively short.

4. Once the service name is determined, the service namespace's identifier is defined and placed within the provider organization namespace. This is done by concatenating the organization namespace with the service name. For example, if the organization whose namespace is "urn:us:gov:dot:faa:avs:cam" owns a service for locating Aviation Medical Examiners, then the resulting service namespace might be "urn:us:gov:dot:faa:avs:cam:AMELocator".

NOTE: Other subordinate namespaces may be required within a service. They are developed in a similar fashion by concatenating additional hierarchical components with the service name and, like service namespaces, are also registered in FDR. An example of a convention for naming these hierarchical components is shown in [Appendix C](#).

Effects: The namespace for the service has been developed.

5.1.1.3 Develop Taxonomy Namespaces

Participants: [Service Provider](#)

Preconditions: See [section 4 preconditions](#). A namespace for the provider organization has been registered in FDR. A new taxonomy has been developed in accordance with [section 5.2](#).

NOTE: Section 5.1.1.3 addresses taxonomies that are identified for use at the local or business level. Taxonomies created by FAA that are approved for use as FAA-wide standards and included in FAA-STD-066 (or have been submitted for such approval) are registered in FDR and defined under the namespace "urn:us:gov:dot:faa:taxonomies:<taxonomy name>". See [section 5.2](#) for more information.

Process:

1. The service provider determines whether the taxonomy has an associated namespace registered in the FDR. If a taxonomy namespace has not been registered, the service provider develops the namespace for the taxonomy as follows:
2. The service provider identifies the namespace assigned to the provider organization.
3. The service provider determines the name of the taxonomy.

NOTE: Ordinarily the full name and acronym of the taxonomy has already been established during its development. It is always preferable to use either the acronym or at least an abbreviated version of the full name to keep namespace strings relatively short.

4. Once the taxonomy name is determined, the taxonomy namespace's identifier is defined and placed within the provider organization namespace. This is done by concatenating the organization namespace with the taxonomy name. For example, if the organization whose namespace is "urn:us:gov:dot:faa:avs:cam" establishes an "aerospace medical dispositions" taxonomy for classifying medical conditions according to their aeromedical significance, then the resulting taxonomy namespace might be "urn:us:gov:dot:faa:avs:cam:med-dispositions".

Effects: The namespace for the taxonomy has been developed.

5.1.2 Register Namespaces in the FAA Data Registry

Participants: [Service Provider](#), [FDR Registrar](#)

Preconditions: A new namespace has been developed using the process described in [section 5.1.1](#).

Process:

1. The service provider registers the namespace in FDR by either (1) filling out a namespace registration form containing the metadata that describes the namespace and submitting the completed form to the FDR registrar, or (2) requesting access to FDR and entering the metadata directly. A copy of the form together with instructions for its use is included in [Appendix D](#).
2. To view the registered namespace on FDR, the service provider accesses FDR at <http://fdr.gov>. A log-in is required for any activity except searching for and reading standardized entities, including namespaces. For permission to enter and update information, a user account and password can be obtained from the FDR registrar.

NOTE: Contact information for the FDR registrar is provided at <http://fdr.gov>; click on "contacts" at the bottom of the screen.

3. The FDR maintains registration statuses for all registered items, including namespaces. The statuses are assigned in accordance with [ISO 11179](#) and are: Incomplete, Recorded, Qualified, Standardized, Retired, and Superseded. The decision to progress these statuses from one to another is made by the service provider in coordination with the FDR registrar.

NOTE: ISO/IEC 11179 provides a process in which items to be administered in FDR are formally submitted to a registration authority for standardization. An overview of the process and explanation of registration statuses is given in [Appendix E](#).

4. The service provider may enter the namespace metadata into FDR and update it at any time prior to its being assigned "Standardized" status. Assistance with entering metadata is available from the FDR registrar.
5. If the service provider chooses to submit a Namespace Registration Form, the FDR registrar enters the metadata and informs the service provider when the metadata has

been registered so that the service provider can examine the registered namespace to verify its correct entry.

6. When the service provider is satisfied that the new namespace's metadata meets all quality requirements, he or she notifies the FDR registrar via email that the namespace is approved for limited use (registration status = "Qualified").

NOTE: Contact information for the FDR registrar is provided at <http://fdr.gov>; click on "contacts" at the bottom of the screen.

7. When the service provider decides that the namespace should be approved for general use, he or she may ask the FDR registrar to change its registration status to "Standardized".

Effects: The namespace has been successfully registered in FDR.

5.2 Develop Taxonomies

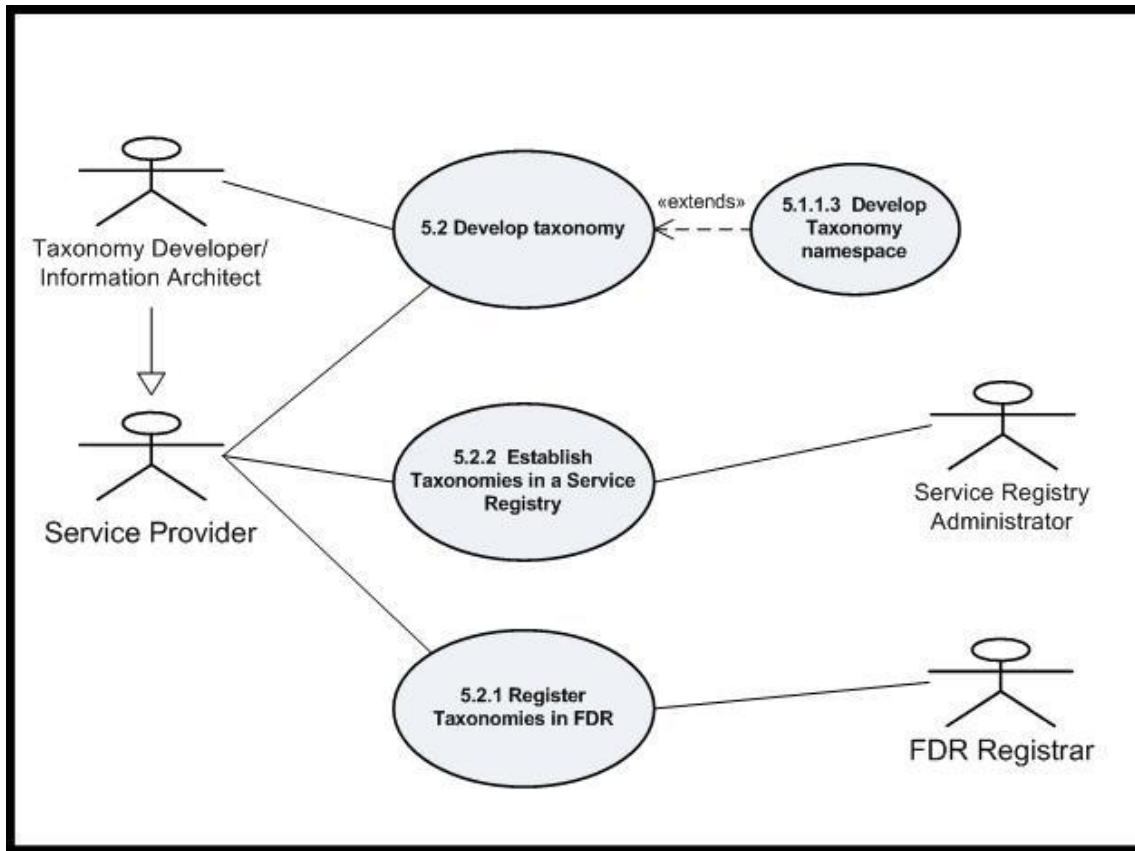


Figure 4. Develop Taxonomies Use Case Diagram

Participants: [Taxonomy Developer/Information Architect](#), [Service Provider](#), [FDR Registrar](#)

Preconditions: See [section 4 preconditions](#).

Process:

1. The taxonomy developer/information architect or service provider searches the FDR to see if any taxonomies have already been registered that might suit the purpose for which the proposed taxonomy is being developed.

NOTE: Web service taxonomies that are required by FAA-STD-066 for agency-wide use in all FAA-affiliated service registries are registered in the FDR and maintained by the FDR registrar. In addition to Web service taxonomies, programs often develop data taxonomies to be used at the agency-wide or local level for the purpose of enterprise information management. These may also be registered in FDR. Because they may prove potentially useful for Web services and appear in future versions of FAA-STD-066, they should not be overlooked.

2. If no suitable taxonomy is found in FDR, the taxonomy developer/information architect, alone or in collaboration with the service provider, designs the taxonomy.

NOTE: Developing taxonomies of any complexity may require the assistance of subject matter experts, information architects, or taxonomists skilled in content classification.

Information on how to design taxonomies and classification schemes is beyond the scope of this Handbook.

3. The taxonomy developer/information architect describes the taxonomy's structure and content (metadata) in accordance with FAA-STD-066 requirements. An example of a documented taxonomy is shown in [Appendix F](#).
4. The service provider (or taxonomy developer/information architect acting on the service provider's behalf) registers a namespace for the taxonomy as described in [section 5.1.1.3](#).
5. The taxonomy developer/information architect optionally registers the taxonomy in FDR as described in [section 5.2.1](#).

NOTE: FAA-STD-066 does not mandate registering taxonomies in FDR, but encourages their registration since they may prove to be candidates for use by other FAA programs and possible inclusion in future versions of FAA-STD-066.

6. The service provider (or taxonomy developer/information architect acting on the service provider's behalf) submits the taxonomy for establishment in a service registry as described in [section 5.2.2](#).

Effects: The taxonomy conforms to FAA-STD-066 requirements and is suitable for use in a service registry and/or registration in FDR.

5.2.1 Register Taxonomies in the FAA Data Registry (Optional)

Participants: [Taxonomy Developer/Information Architect](#), [FDR Registrar](#)

Preconditions: A new taxonomy has been successfully developed using the process described in [section 5.2](#).

Process:

1. The taxonomy developer/information architect registers the taxonomy in FDR by either (1) filling out a Taxonomy Registration Form containing the metadata that describes the taxonomy and submitting the completed form to the FDR registrar, or (2) requesting access to FDR and entering the metadata directly. A copy of the form together with instructions for its use is included in [Appendix F](#).
2. To view the registered taxonomy on FDR, the taxonomy developer/information architect accesses FDR at <http://fdr.gov>. A log-in is required for any activity except searching for and reading standardized entities, including taxonomies. For permission to enter and update information, a user account and password can be obtained from the FDR registrar.

NOTE: Contact information for the FDR registrar is provided at <http://fdr.gov>; click on "contacts" at the bottom of the screen.

3. The FDR maintains registration statuses for all registered components, including taxonomies. The statuses are assigned in accordance with [ISO 11179](#) and are: Incomplete, Recorded, Qualified, Standardized, Retired, and Superseded. The decision to progress these statuses from one to another is made by the taxonomy developer/information architect in coordination with the FDR registrar.

NOTE: ISO/IEC 11179 provides a process in which items to be administered in FDR are formally submitted to a registration authority for standardization. An overview of the process and explanation of registration statuses is contained in [Appendix E](#).

4. The taxonomy developer/information architect may enter the taxonomy metadata into FDR and update it at any time prior to its being assigned "Standardized" status. Assistance with entering metadata is available from the FDR registrar.

5. If the taxonomy developer/information architect chooses to submit a Taxonomy Registration Form, the FDR registrar enters the metadata and informs the service provider when the metadata has been registered, after which the service provider views the registered taxonomy to verify its correct entry.
6. When the taxonomy developer/information architect is satisfied that the taxonomy's metadata meets all quality requirements, he or she notifies the FDR registrar that the taxonomy is approved for limited use (registration status = "Qualified").
7. When the taxonomy developer/information architect decides that the taxonomy should be approved for use in his business domain, he or she requests the FDR registrar to change its registration status to "Standardized".

NOTE: Taxonomies that are proposed for agency-wide use and intended for inclusion in FAA-STD-066 will require FDGB review and approval as part of the National Airspace System (NAS) Change Proposal (NCP) process for changing FAA standards. For assistance with developing an NCP, contact the FDGB secretary at mojideh.supola@faa.gov.

Effects: The taxonomy has been registered successfully and is available to FDR users.

5.2.2 Establish Taxonomies in a Service Registry

Participants: [Service Registry Administrator](#), [Service Provider](#)

Preconditions: A new taxonomy has been successfully developed using the process described in [section 5.2](#).

Process:

1. The service provider submits a request to the service registry administrator to add the new taxonomy to the service registry.
2. The service registry administrator verifies that the taxonomy's metadata (including its namespace) is complete and in accordance with FAA-STD-066 requirements.
3. The service registry administrator adds the taxonomy to the service registry, while taking into consideration the requirements and constraints imposed by the technology and methodology of the service registry's implementation.

Effects: The taxonomy has been successfully established in the service registry and is available to service registry users.

5.3 Publish the Service in a Service Registry

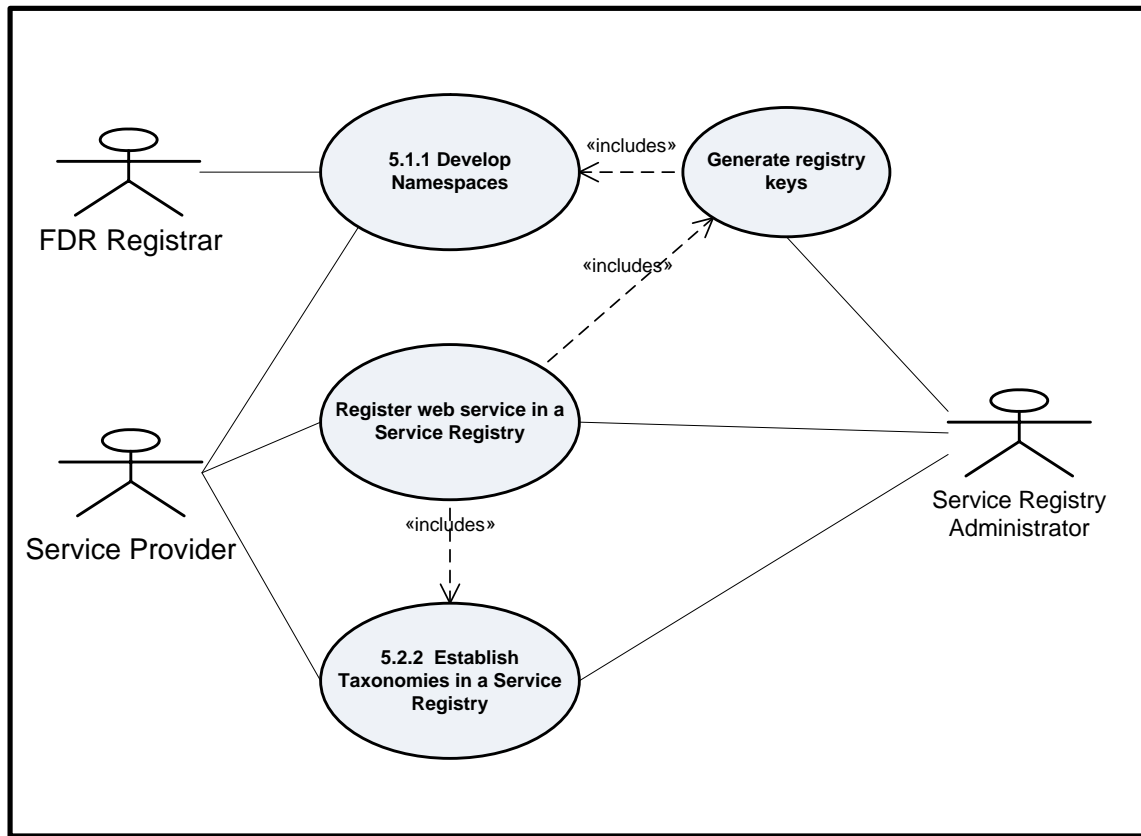


Figure 5. Publish Service in Service Registry Use Case Diagram

Participants: [Service Provider](#), [Service Registry Administrator](#)

Preconditions: See [section 4 preconditions](#).

NOTE: Depending on the provider organization's service governance/lifecycle processes, there may be cases where information about an unfunded or planned service could be registered. This Handbook does not address governance processes.

Process:

1. The service provider obtains the requisite registration policy/procedure guidance documentation from the service registry administrator.

NOTE: Examples of policies developed for FAA service registry organizations are posted for instructional use at <http://fdr.gov>; click on "Standards and Handbooks" in the Library portion of the screen, and choose the examples from the resulting list

NOTE: Information about the locations of and points of contact for FAA service registries is available from the FAA Data Governance Board; email the FDGB secretary at mojdeh.supola@faa.gov.

2. The service provider obtains a user account from the service registry administrator.
3. The service provider ensures that a namespace for the provider organization has been developed and established as described in [section 5.1.1.1](#).

4. The service provider ensures that a namespace for the service has been developed and established as described in [section 5.1.1.2](#).
5. The service registry administrator ensures that agency-wide taxonomies required by FAA-STD-064 for use in service registration, as well as any additional taxonomies developed by or for the service provider as described in [section 5.2.1](#), have been established in the service registry as described in [section 5.2.2](#).
6. The service registry administrator generates the service registry [keys](#) for the service in accordance with FAA-STD-064 section 5.8 and service registry policies and procedures.
7. The service provider enters into the service registry all information as required by FAA-STD-064 and service registry-specific policies and procedures.

NOTE: It is possible that for some service registries, the service provider supplies the information to the service registry administrator instead of entering it directly into the service registry and, after some validation and approval process, the service registry administrator enters the information into the service registry. In this case we assert that the service provider delegates his responsibility for service registration to the service registry administrator, but the service provider is still ultimately responsible for the completeness and accuracy of the registered service information.

8. The service provider updates the information published in the service registry as needed to provide a current and accurate representation of the registered service and to maintain consistency with the WSDL file and the Web Service Description Document (described in [section 5.4](#)). [Figure 8](#) portrays the commonality between service registry information and WSDD content.
9. The service provider ensures that the registered service is managed in accordance with the provider organization's configuration management procedures.

Effects: The service has been registered; validated for compliance with FAA-STD-064, provider organization, and service registry requirements; and is suitable for discovery and use by authorized consumers.

5.4 Develop the Web Service Description Document

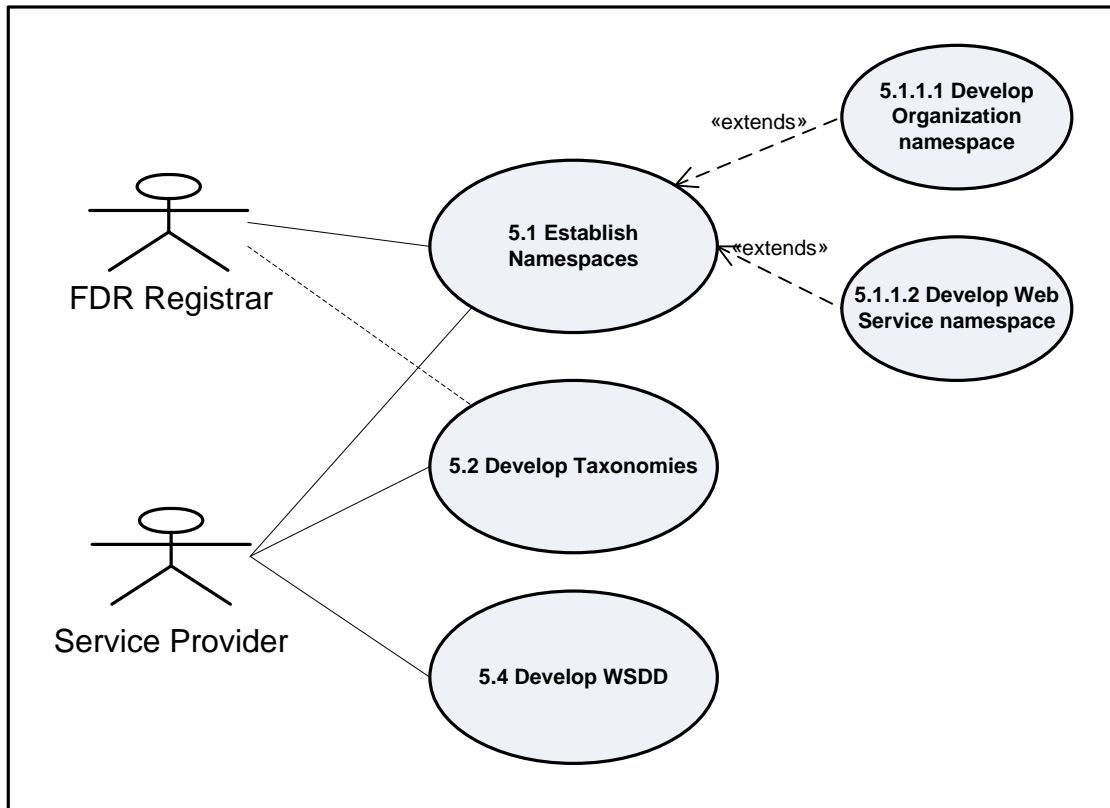


Figure 6. Develop Web Service Description Document Use Case Diagram

Participants: [Service Provider](#)

Preconditions: See [section 4 preconditions](#).

Process:

1. The service provider obtains or establishes a WSDD identifier in accordance with the provider organization's configuration management procedures.
2. The service provider ensures that a namespace for the provider organization has been developed and established as described in [section 5.1.1.1](#).
3. The service provider ensures that a namespace for the service has been developed and established as described in [section 5.1.1.2](#).
4. If the service provider uses other taxonomies in addition to the agency-wide taxonomies already required by FAA-STD-065 as a part of the WSDD's content, he or she develops and optionally registers the other taxonomies in FDR as described in [section 5.2](#).
5. The service provider develops the WSDD's content in accordance with FAA-STD-065.

NOTE: An illustrative example of a WSDD that describes a fictitious "Flight Plan Service" in accordance with FAA-STD-065 requirements is provided for instructional use at <http://fdr.gov>; click on "Standards and Handbooks" in the Library portion of the screen, and choose the "Sample Web Service Description Document" from the resulting list.

6. The service provider updates the WSDD as needed to maintain consistency among the WSDD, the WSDL schema, and the information published in the service registry. [Figure 7](#) demonstrates the conceptual mapping between WSDL and WSDD elements. [Figure 8](#) portrays the commonality between service registry information and WSDD content.
7. The service provider ensures that the WSDD is managed in accordance with the provider organization's configuration management procedures.

Effects: The WSDD has been developed in conformance with FAA-STD-065 requirements and is suitable for release to authorized users.

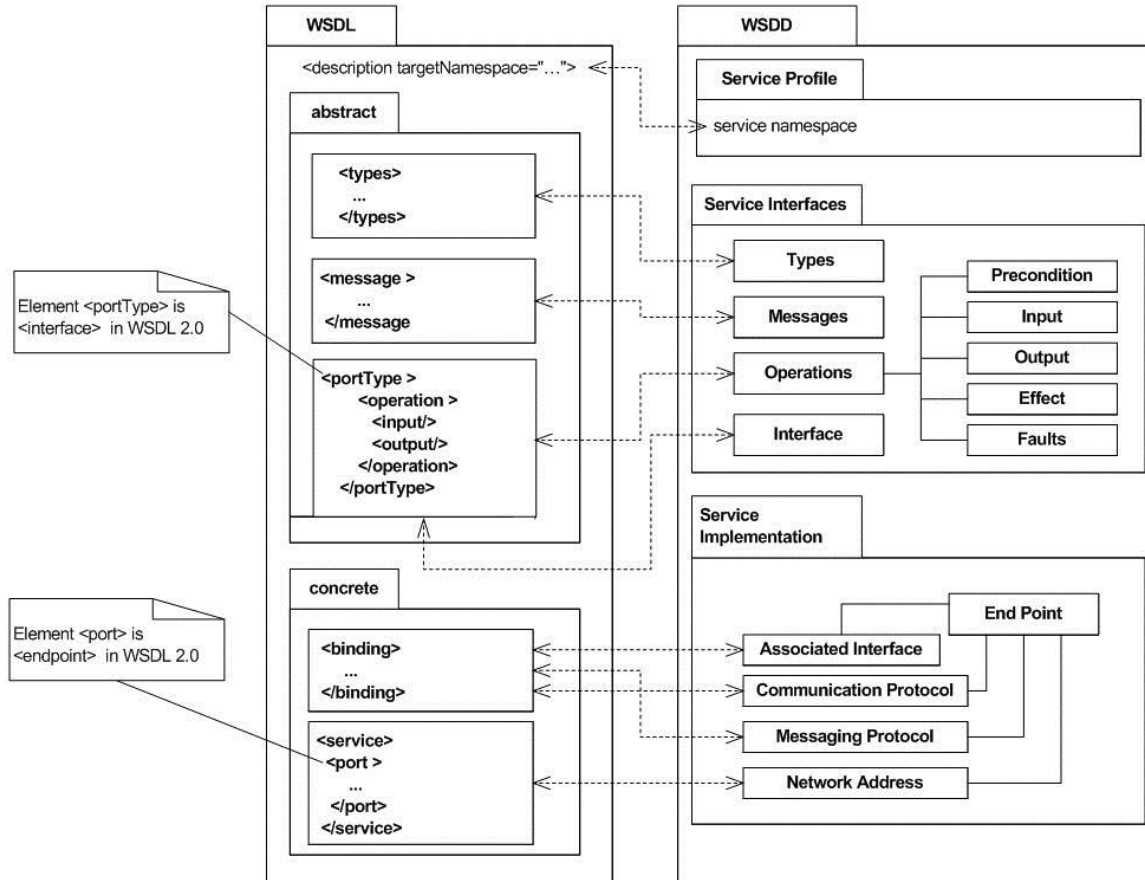


Figure 7. Correlations between Sections of WSDD and WSDL Schema Elements

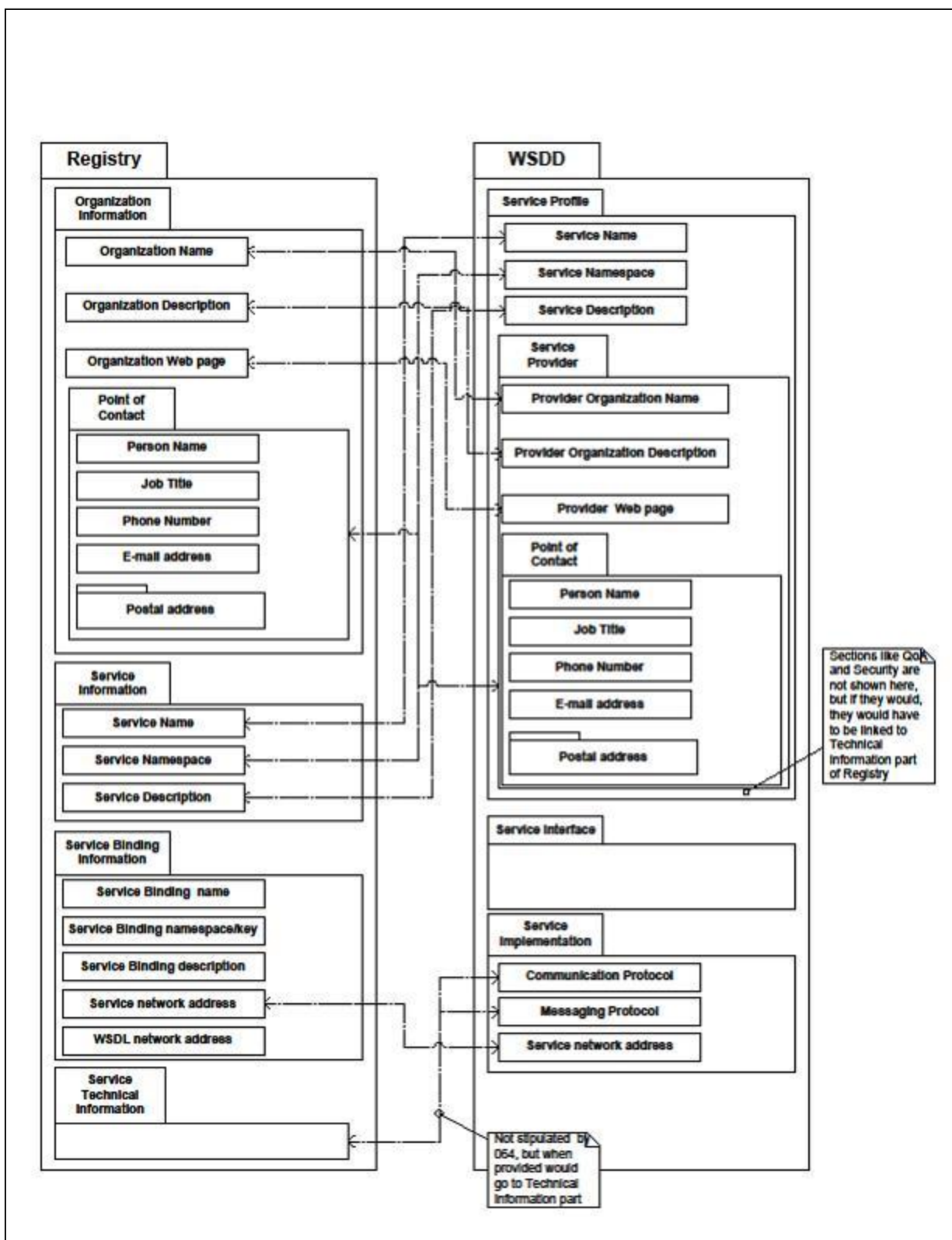


Figure 8. Conceptual Mapping between Service Registry Metadata and WSDD Content

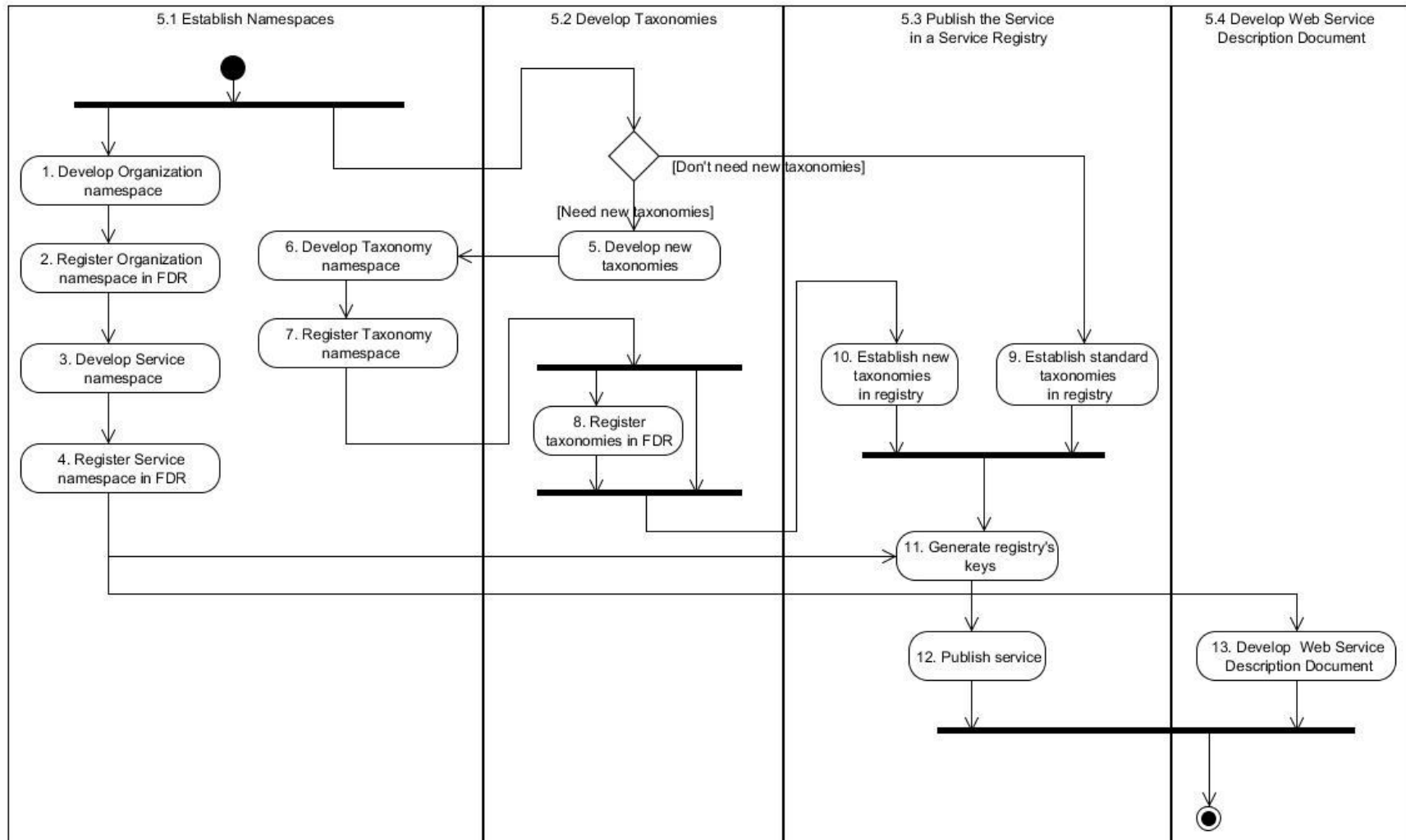
6 Notes

Not applicable.

Appendix A. Service Provider Checklist

#	Activity	Referenced in	Comments
1	Develop organization namespace	Section 5.1.1.1	It's assumed here that an organizational namespace for the given service does not exist.
2	Register organization namespace in FDR	Section 5.1.2	
3	Develop service namespace	Section 5.1.1.2	
4	Register service namespace In FDR	Section 5.1.2	
5	Develop new taxonomies	Section 5.2	Optional. Only when FAA-wide required taxonomies presented in FAA-STD-066 are proven to be insufficient for a given domain.
6	Develop new taxonomy namespaces	Section 5.1.1.3	Required for new taxonomies.
7	Register new taxonomy namespaces in FDR	Section 5.1.2	Required for new taxonomies
8	Register new taxonomies in FDR	Section 5.2.1	Optional for new taxonomies.
9, 10	Establish taxonomies in service registry	Section 5.2.2	Usually implemented by service registry administrator, but could be delegated to a service provider.
11	Generate service registry's keys	Section 5.3	Implemented by service registry administrator.
12	Publish service in service registry	Section 5.3	
13	Develop Web Service Description Document	Section 5.4	

The following diagram depicts the workflow of gathering and presenting Web service metadata as described in this handbook.



Appendix B. Namespaces Registered in FDR as of January 13, 2011

NOTE: To see the most current list of approved namespaces, go to <https://fdr.gov>, click "Administered Items", select "XML Namespace" from the drop-down list of Item Types near the top of the window, and click "Apply filter" just above the Item Type. The list will also provide additional registration information maintained for each namespace, such as version, steward, submitter, etc.

Name	Definition	Context	Registration Status
urn:us:gov:dot:faa	This namespace is associated with Federal Aviation Administration business domain.	FAA	STANDARDIZED
urn:us:gov:dot:faa:aim	This namespace is associated with Aeronautical Information Management business domain.	FAA	STANDARDIZED
urn:us:gov:dot:faa:aim:saa	This namespace is associated with Special Activity Airspace (SAA) service within the Aeronautical Information Management business domain.	FAA	STANDARDIZED
urn:us:gov:dot:faa:atm	This namespace is associated with Air Traffic Management business domain.	FAA	STANDARDIZED
urn:us:gov:dot:faa:atm:enroute	This namespace is associated with the Enroute Organization.	FAA	STANDARDIZED
urn:us:gov:dot:faa:atm:enroute:entities	This namespace is associated with all schema elements used by different services.	FAA	STANDARDIZED
urn:us:gov:dot:faa:atm:enroute:entities:flightdata	This namespace is associated with the flight data types used by flight-related services including Flight Information Service (and possibly others in future).	FAA	STANDARDIZED
urn:us:gov:dot:faa:atm:enroute:entities:flightinfo	This namespace is associated with the data elements and operations used by flight information service.	FAA	STANDARDIZED
urn:us:gov:dot:faa:atm:enroute:services	This namespace is associated with the Enroute web services.	FAA	STANDARDIZED
urn:us:gov:dot:faa:atm:enroute:services:flightinfo	This namespace is associated with the Enroute flight information service.	FAA	STANDARDIZED
urn:us:gov:dot:faa:avs	This namespace is associated with Aviation Safety business domain.	FAA	STANDARDIZED
urn:us:gov:dot:faa:swim	Parent namespace for SWIM infrastructure services and elements.	FAA	STANDARDIZED
urn:us:gov:dot:faa:taxonomies	A parent namespace for all FAA taxonomies.	FAA	STANDARDIZED

Name	Definition	Context	Registration Status
urn:us:gov:dot:faa:taxonomies:faaOffice	This is the namespace associated with the FAA Office taxonomy which provides a single standard system for categorizing FAA organizations by the FAA staff office or line of business under which they operate.	FAA	STANDARDIZED
urn:us:gov:dot:faa:taxonomies:lifecycle-stage	This is the namespace associated with the FAA Lifecycle Stage taxonomy which provides a single standard system for categorizing FAA services by the stage they currently occupy in their life cycle.	FAA	STANDARDIZED
urn:us:gov:dot:faa:taxonomies:MEP	This is the namespace associated with the FAA Message Exchange taxonomy which provides a single standard system for categorizing FAA services by the message exchange pattern employed.	FAA	STANDARDIZED
urn:us:gov:dot:faa:taxonomies:service-category	This is the namespace associated with the FAA Service Category taxonomy which provides a single standard system for categorizing FAA services by the type of service provided.	FAA	STANDARDIZED
urn:us:gov:dot:faa:taxonomies:service-criticality	This is the namespace associated with the FAA Service Criticality taxonomy which provides a single standard system for categorizing FAA services by their level of criticality.	FAA	STANDARDIZED
urn:us:gov:dot:faa:taxonomies:service-visibility	This is the namespace associated with the FAA Service Visibility taxonomy which provides a single standard system for categorizing FAA services by their level of discretionary access.	FAA	STANDARDIZED
urn:us:gov:dot:faa:weather	This namespace is associated with the weather domain.	FAA	STANDARDIZED
urn:us:gov:dot:faa:weather:aws	This is a namespace for Aviation Weather Service organization	FAA	STANDARDIZED
urn:us:gov:dot:faa:weather:aws:itws	This is a namespace for Integrated Terminal Weather products.	FAA	STANDARDIZED

Appendix C. Example of URN Naming Convention

NOTE: The following material is an adaptation of a draft convention developed by and for FAA's Aviation Safety organization. While the example is instructive, its actual use is neither required nor suggested.

NOTE: In the example URNs shown below, "lob" (or "LOB") represents the FAA Business Context Identifier of a fictitious FAA organization.

1.0 ADMINISTRATION INFORMATION:

Program or Acquisition title: Architecture Standard for Uniform Resource Name (URN)

1.1 Background

The URN Naming Convention standard has been established at the FAA level as "us:gov:dot:faa". In accordance with Standard Practice FAA-STD-063, *XML Namespaces*, we have obtained the namespace identifier "us:gov:dot:faa:lob" for our Line of Business (LOB). Further definition is required for planned services in order to categorize and catalog services that will be developed and made available for national applications in the Service Oriented Architecture (SOA). Eventually, other applications external to the LOB may use SOA services.

2.0 NAMESPACE SCHEMA

2.1 Structure (*Note: Normal structure is in lower case)

CONVENTION: US:GOV:DOT:FAA:LOB:{SERVICE FUNCTION DOMAIN}:{SERVICE or SERVICE CATEGORY}:{SERVICE}:{ACTION}

NOTE: The last two namespace components, SERVICE and ACTION, are optional based on the needs of the service provider. Some examples below will include these namespace parts but others will not.

The following DEFINITION sections explain the scope and purpose for each of the first and second-level components of the namespace standard.

DEFINITION: {SERVICE FUNCTION DOMAIN, max 6 alphanumeric} – First-Level

The SERVICE FUNCTION DOMAIN component of the namespace defines major categories of SOA services in the LOB environment.

Acceptable choices for the SERVICE FUNCTION DOMAINS are limited by categories defined in this standard. Below is the list of proposed SERVICE FUNCTION DOMAIN categories. New categories, and modifications to existing categories, can be proposed and added to this standard following the LOB standards process.

- **BUSLOG – Business and Logic Services**
 - Business Rules and Logic specific to LOB business processes
 - Provides access points to business processes
 - Supports BPM, Orchestration and Business Rules Engines
 - Specifies what the business does and executes the business rules
 - Provides task centric services

- **DATOPS – Operational Data Services**
 - CRUD (create, read, update, delete) functions for operational data stores
 - Provide validation and data querying
 - Manage relations between composite entities
 - Provides transformation for multiple data sources
- **DATREF – Referential Data Services**
 - Query functions to referential data stores (e.g. SRT, ASIAs, ASTARS)
 - Provide validation and data querying
 - Manage relations between composite entities
 - Provides transformation for multiple data sources
- **UTIL – Utility Services**
 - Manages the general reuse process functionality
 - Allows the selection of generic reuse qualities
 - Handles exceptions, events, and triggers
- **INFRA – Technical, Integration, and Infrastructure Services**
 - Provides services which are used in common by all services such as Audit, Logging, Validation, security,
 - Enterprise Service Bus (ESB) Infrastructure
 - Infrastructure security
 - ESB transformation
 - Universal Description, Discover, and Integration (UDDI) Registry Services
 - Provides API wrappers
 - ESB Adapters
 - JDBC/ODBC/LDAP/JNDI, screen scraping

DEFINITION: {SERVICE or SERVICE CATEGORY, max 15 alphanumeric} Second-Level

The population of the second-level component in the LOB namespace is dependent on the SERVICE FUNCTION DOMAIN category under which the service is assigned. This second-level component of the LOB namespace provides either service names or sub-categories depending on the parent SERVICE FUNCTION DOMAIN. The guidance below provides definition and examples for this second-level component.

Reminder: CONVENTION: US:GOV:DOT:FAA:LOB:{SERVICE FUNCTION DOMAIN}:{SERVICE or SERVICE CATEGORY}:{SERVICE}:{ACTION}

BUSLOG – Service name or acronym based on functionality provided. Services in this category provide functionality / orchestration of some sort to meet a business need; they are separate from data-oriented services which are covered under two other SERVICE FUNCTION DOMAINS.

Examples (these are not necessarily actual services) include:

- **RBRT**- Risk Based Resource Targeting rating algorithms
 Example URN: **us:gov:dot:faa:lob:buslog:rbrt:stcrating**
rbrt = Risk Based Resource Targeting category of services
stcrating = specific service call for generating a “rating” for STC’s.

- **MSAD** – Monitor Safety & Analyze Data criteria number crunching
Example URN: **us:gov:dot:faa:lob:buslog:msad:coractrating**
msad = Monitor Safety Analyze Data category of services
coractrating = specific service call for calculating corrective action rating value
- **eFORMS** – e337 workflow
Example URN: **us:gov:dot:faa:lob:buslog:e337start**
e337start = service call to start workflow for processing of 337's

Reminder: CONVENTION: US:GOV:DOT:FAA:LOB:{SERVICE FUNCTION DOMAIN}:{SERVICE or SERVICE CATEGORY}:{SERVICE}:{ACTION}

DATOPS – Data provided by the services or an acronym describing the data. Operational in nature so some level of CRUD (Create, Read, Update, and Delete) may be part of the service name or a parameter passed to the service.

Examples (these are not necessarily actual services) include:

- **SRT** – Country Code table update service – used by SRT to maintain updates from FDR (FAA Data Registry) according to the ICD.
Example URN: **us:gov:dot:faa:lob:datops:country_code:fdrupdate**
(Again, this is an example; currently the actual data transfer is more manual.) *Note use of special character (_)
- **MSAD** – Monitor Safety & Analyze Data retrieve SDR data from SPAS
Example URN: **us:gov:dot:faa:lob:datops:sdrretrieve**
sdrretrieve = service run to retrieve SDR updates from SPAS.

Reminder: CONVENTION: US:GOV:DOT:FAA:LOB:{SERVICE FUNCTION DOMAIN}:{SERVICE or SERVICE CATEGORY}:{SERVICE}:{ACTION}

DATREF – Data provided by the services or an acronym describing the data. Referential in nature; services in this category provide authoritative reference information to other applications and services. The second-level component will either contain a SERVICE CATEGORY or an actual SERVICE call.

The Country Code and Stat Rep Codes examples below show the use of SERVICE CATEGORY while the Make Model Series example shows the direct call of a SERVICE.

Examples (these are not necessarily actual services) include:

- **Country Code** – provided by SRT for Country
Example URN: **us:gov:dot:faa:lob:datref:country_code:cc.list**
Example URN: **us:gov:dot:faa:lob:datref:country_code:cc.get**
country_code = data category
cc.list & cc.get = service call to country_code service for list or get functions.

Examples for ACTIONS or Operators for the SRT COUNTRY service are listed below:

- **Add** – adds a country
- **List** – returns a subset of (or all) countries
- **Get** – returns a single country
- **Translate** – translates between standards

- **Update** – updates values associated with a country
- **Delete** – deletes a country
- **Stat Rep Codes** – provided by ASTARS to get/list standardized categories of job classifications – used for workforce planning
 Example URN: **us:gov:dot:faa:lob:datref:statrepcode:statrep.list**
 Example URN: **us:gov:dot:faa:lob:datref:statrepcode:statrep.get**
- **Make Model Series** – a complex service provided by SRT to lookup of Make Model Series information in several formats
 Example URN: **us:gov:dot:faa:lob:datref:mms.list**
 Example URN: **us:gov:dot:faa:lob:datref:mms.get**
mms.list & mms.get = retrieve data from SRT_AIRCRAFT_MFG_MODEL_SERIES table.
 Example URN: **us:gov:dot:faa:lob:datref:mms_mfg.list**
 Example URN: **us:gov:dot:faa:lob:datref:mms_mfg.get**
mms_mfg.list & mms_mfg.get = retrieve data from SRT_AIRCRAFT_MFG table which contains standard references to all aircraft manufacturers. * **Note: Use of special character (_)**

Reminder: CONVENTION: US:GOV:DOT:FAA:LOB:{SERVICE FUNCTION DOMAIN}:{SERVICE or SERVICE CATEGORY}:{SERVICE}:{ACTION}

UTIL – UTIL services are used by many SERVICE FUNCTIONS/Applications and other Services in the LOB SOA. Acceptable choices for the SERVICE FUNCTION under UTIL are limited by categories defined in this standard. Below is the list of proposed UTIL SERVICE FUNCTION categories. New categories can be proposed and added to this standard by proposing a change through the LOB Services Change Control Board.

The “UTIL” SERVICE FUNCTION AREA has predefined SERVICE CATEGORIES:

- **HELP** – Services that deliver application and context sensitive help. Multiple applications may use a help service to provide page- and event-specific informational messages. This may include Help, Alerts, Notifications, and E-mail services.

 Example URN: **us:gov:dot:faa:lob:util:help:msad.data**
msad.data = retrieve help for Monitor Safety Analyze Data application data elements.
- **CONFIG** – Services that provide configuration templates and management services for applications. This may include Enhancement Reporting, Splash Screen Templates services, Master Page Templates.

 Example URN: **us:gov:dot:faa:lob:util:config:splash.msad**
splash.msad = present splash screen for Monitor Safety Analyze Data application.
- **APPMGMT** – Services that manage application performance such as Cache Management, Exception Handling and Redirection, Logging, and other general utilities used by applications or other services (Date/Time utilities, unique id's).

 Example URN: **us:gov:dot:faa:lob:util:appmgmt:alert.msad**
alert.msad = retrieve alerts for Monitor Safety Analyze Data application home screen.

- **REPORT** – Services providing reporting capabilities for multiple applications/services.

Example URN: **us:gov:dot:faa:lob:util:report:msad:coract**
msad.coract = present list of prioritized corrective actions for a specific analysis session.

- **GEN** – Services providing general utility such as Electronic File Service and eFORMS. This category will be monitored for sets of entries that may result in the creation of new UTIL categories.

Example URN: **us:gov:dot:faa:lob:util:gen:msad:send.notice**
send.notice = sends an e-mail to alert an engineer that an MSAD activity has been added to his/her queue.

Reminder: examples above are not necessarily actual services.

Reminder: CONVENTION: US:GOV:DOT:FAA:LOB:{SERVICE FUNCTION DOMAIN}:{SERVICE or SERVICE CATEGORY}:{SERVICE}:{ACTION}

INFRA – INFRA services are used by many Services/Applications in the LOB SOA. Acceptable choices for the SERVICE CATEGORY (second-level namespace component) under INFRA are limited by categories defined in this standard. Below is the list of proposed INFRA SERVICE CATEGORY categories. New categories can be proposed and added to this standard by proposing a change through the LOB Services Change Control Board.

INFRA SERVICE FUNCTION categories are:

- **AUTH** – Security utilities controlling individual and role based access to applications/services. Authentication and Authorization type services.

Example URN: **us:gov:dot:faa:lob:infra:auth:profile.msad**
profile.msad = Active Directory authentication and role assignments for MSAD users.

Example URN: **us:gov:dot:faa:lob:infra:auth:profile.astars**
profile.astars = Active Directory authentication and role assignments for ASTARS users.

- **ENC** – Services providing encryption and signature (e.g. PKI)

Example URN: **us:gov:dot:faa:lob:infra:enc:e337crypt**
e337crypt = encrypts 337 form for filing / sending.

- **SOA** – Services supporting the LOB Service Oriented Architecture infrastructure services such as Enterprise Service Bus (ESB), UDDI registry, and other SOA support such as the ASKME Service Locator service.
- **INT** – Services providing integration to various levels of the SOA. Examples include API wrappers and ESB adapters.
- **GEN** – Services not fitting into the above INFRA categories – this category will be monitored for sets of entries that may result in the creation of new INFRA categories.

The table below shows the hierarchy for the LOB URN and UDDI naming conventions.

US:GOV:DOT:FAA:LOB:<SERVICE FUNCTION DOMAIN>:<SERVICE / SERVICE CATEGORY>:<SERVICE>:<ACTION>

US	GOV	DOT	FAA	LOB	<SERVICE FUNCTION DOMAIN> Max 6 Alphanum	<SERVICE or SERVICE CATEGORY> Max 15	<SERVICE> Max 20	<ACTION> (Optional – Max 20)
US	GOV	DOT	FAA	LOB	BUSLOG	Service Name or Service Category	Service- Name	Action- Parameter
US	GOV	DOT	FAA	LOB	DATOPS	Service Name or Service Category	Service- Name	Action- Parameter
US	GOV	DOT	FAA	LOB	DATREF	Service Name or Service Category	Service- Name	Action- Parameter
US	GOV	DOT	FAA	LOB	UTIL	HELP	Service- Name	Action- Parameter
						CONFIG	Service- Name	Action- Parameter
						APPMGMT	Service- Name	Action- Parameter
						REPORT	Service- Name	Action- Parameter
						GEN	Service- Name	Action- Parameter
US	GOV	DOT	FAA	LOB	INFRA	AUTH	Service- Name	Action- Parameter
						ENC	Service- Name	Action- Parameter
						SOA	Service- Name	Action- Parameter
						INT	Service- Name	Action- Parameter
						GEN	Service- Name	Action- Parameter


3.0 SCOPE

This naming convention for services developed within the LOB shall be applied to URN and UDDI artifacts that will be implemented in the LOB Enterprise Data Center supporting the LOB Service Oriented Architecture and its associated technical infrastructure.

This namespace standard does not include the standards for metadata for LOB services implementation. In addition to technical specifications, metadata for LOB services are planned to include items that provide information outside the bounds of this naming convention. Examples of these metadata include Service/Office owner, stakeholders/users, project/application names, etc.

Appendix D. FDR Namespace Registration Form

Form FAA-STD-063 (11/2010)


FAA XML Namespace Registration Form

Please email completed form to Mojdeh Supola (ARD-300) ph.202-385-8022, mojdeh.supola@faa.gov.

FOR USE BY BUSINESS STEWARD (see Form Instructions)			
1. Name (URN):			
2. Description:			
3. Sensitivity Classification:			
Steward	4. Name:		
5. Organization:	6. E-mail:		
Submitter			
7. Name:			
8. Organization:	9. E-mail:		
10. Parent Namespace (URN):			
11. Related Namespace(s):			
12. Reference Document(s):			
	Title	Type	Location (URL)
A			
B			
C			
D			
13. Comments:			
FOR USE BY FDR REGISTRAR			
14. International Registration Data Identifier (IRDI) :			
15. Context: FAA		16. Status: INCOMPLETE	
17. Version Identifier:			
18. Date Created:		19. Effective Date:	
20. Expiration Date:			



Form FAA-STD-063 (11/2010)

XML Namespace Registration Form Instructions

Refer to FAA-STD-063, Section 5.3, Namespace Registration for further details on attributes of Namespaces to be recorded. If after entering data in a field, the data you entered appears truncated by Excel, then drag the line at the bottom of the row number down to increase the height of the row until all the entered data appears.

1. **Name (URN)** - This block contains the namespace in the form of the Uniform Resource Name (URN) as specified in FAA-STD-063. (Required)
2. **Description** - This block contains a brief summary of the namespace's contents. A natural language textual statement that expresses the essential nature of the namespace and permits its differentiation from all other namespaces. (Required)
3. **Sensitivity Classification** - This block contains the nature of the sensitivity of the namespace with respect to access. Valid values are "No Restrictions", "Official Use Only", "Owner Only", "Sensitive". Refer to Service Visibility Taxonomy in FAA-STD-066 for further details. (Required)
4. **Steward Name** - This block contains the contact information associated with the person or group responsible for the integrity and accuracy of the namespace metadata. (Required)
5. **Steward Organization** - This block identifies the organization to which the Steward reports or belongs. (Required)
6. **Steward E-mail** - This block contains the e-mail address for the Steward of the namespace. (Required)
7. **Submitter Name** - This block contains the contact information associated with the person or group responsible for entering the namespace metadata in FDR. (Required)
8. **Submitter Organization** - This block identifies the organization to which the Submitter reports or belongs. (Required)
9. **Submitter E-mail** - This block contains the e-mail address for the Submitter of the namespace. (Required)
10. **Parent Namespace (URN)** - This block contains the URN of the parent namespace of the namespace being registered. (There can be only one namespace identified as the "parent" for each namespace). (Required)
11. **Related Namespace(s)** - This block lists any related namespaces (other than the parent namespace) with its associated Uniform Resource Identifier (URI) and the relationship between it and the subject namespace (e.g., 'child of' or 'similar to'). (Optional)
12. **Reference Documents** - This block contains the Titles, Types and Locations of documents or other resources which provide pertinent details for consultation about the namespace. Document type may be one of the following: "APPENDIX", "COMPUTER PROGRAM FUNCTIONAL SPECIFICATION", "DESCRIPTION", "FAA ADVISORY CIRCULAR", "FAA ORDER", "Image", "INTERFACE CONTROL DOCUMENT", "INTERFACE REQUIREMENTS DOCUMENT", "MEMORANDUM OF AGREEMENT", "NOTE", "REFERENCE", "REQUEST FOR COMMENT", or "STANDARD". If your document is not one of the listed types, call Mojdeh Supola at 202-385-8022. There is a limit of four reference documents. (Optional)
13. **Comments** - This block contains any additional explanatory information that is to be retained along with the registered namespace. (Optional)



Form FAA-STD-063 (11/2010)

FAA XML Namespace Registration Form (EXAMPLE)

Please email completed form to Mojdeh Supola (ARD-300) ph 202-385-8022, mojdeh.supola@faa.gov.

FOR USE BY BUSINESS STEWARD (see Form Instructions)

1. Name (URN): urn:us:gov:dot:faa:aim:saa		
2. Description: This namespace is associated with Special Activity Airspace (SAA) service within the Aeronautical Information Management business domain.		
3. Sensitivity Classification: No Restrictions		
Steward	4. Name: Navin Vembar	
5. Organization: Aeronautical Information Management Group	6. E-mail: navin.vembar@faa.gov	
Submitter	7. Name: Kevin Lew	
8. Organization: Aeronautical Information Management	9. E-mail: Kevin.CTR.Lew@faa.gov	
10. Parent Namespace (URN): urn:us:gov:dot:faa:aim		
11. Related Namespace(s):		
12. Reference Document(s):		
	Title	Type Location (URL)
A		
B		
C		
D		
13. Comments:		
FOR USE BY FDR REGISTRAR		
14. International Registration Data Identifier (IRDI):		
15. Context: FAA	16. Status: INCOMPLETE	17. Version Identifier:
18. Date Created:	19. Effective Date:	20. Expiration Date:

Appendix E. FDR Standardization Process Overview

(The following material is reproduced from section 8.2.9 of the FAA Data Standardization Handbook, [FAA-HDBK-007](#).)

The ISO/IEC 11179 standard provides a process whereby data elements and other administered items are formally submitted to a registration authority for standardization. There are three roles and functions that are part of this process: stewardship, registration, and administration. (*NOTE: Administration is an internal registrar function and is not discussed here.*)

a. **Stewardship.** Each administered item has a data steward who is responsible for the metadata quality of an object and is the point of contact for a given data element. (Note: This person does not necessarily create or maintain the metadata.) The data steward belongs to an organization. An organization can be identified at any level (e.g., agency, program area, staff area, or project).

b. **Registration Status.** When a data element or other administered item is registered, it must conform to ISO/IEC 11179 standard and FDR requirements. The applicable registration status values for data standardization within the FDR are based on ISO/IEC 11179 definitions and include the following:

1. **Incomplete:** An administered item with the “Incomplete” status indicates that the submitter wishes to make the community that uses this metadata registry aware of the existence of an administered item in their local domain. An item with the status of “Incomplete” in the metadata registry is not maintained under version control. The minimum metadata attribute documentation for an item with “Incomplete” status in the metadata registry is as follows: preferred name, definition, submitter organization name, submitter contact name, and submitter contact information. The registered administered item may not necessarily contain all mandatory attribute values.
2. **Recorded:** An administered item with the “Recorded” status indicates that it has been proposed for progression through the registration levels. It also means that all mandatory metadata attributes have been completed. An administered item with “Recorded” status implies that the item may be being shared across domains; however, the contents of the mandatory metadata attributes may not necessarily conform to quality requirements specified in ISO/IEC 11179 and FDGB procedures. The submitter may request the retirement of a “Recorded” administered item at any time. Administered items with “Recorded” registration status or higher are maintained under version control.
3. **Qualified:** An administered item with the “Qualified” status means that the item had a “Recorded” registration status and the Registration Authority has confirmed that the mandatory metadata attributes are complete and conform to applicable quality requirements. In the event that an item is not approved by the Registration Authority for the “Qualified” registration status level, it shall remain at the “Recorded” registration status level.
4. **Standardized:** An administered item with the “Standardized” status indicates that the item had a “Qualified” registration status and the Registration Authority has confirmed that it is of sufficient quality and of broad interest for use in the community that uses this metadata registry. The “Standardized” administered item is preferred for use in new or updated applications. Note that “Standardized” does not necessarily imply uniqueness; there may be more than one “Standardized” item that addresses the same function, concept, etc.
5. **Retired:** An administered item with the “Retired” status indicates that the Registration Authority has determined the item is no longer recommended for use in the community that uses this metadata registry. A “Retired” administered item should no longer be used.

“Retired” items should include a reference to replacement items when appropriate. Only editorial edits of “Retired” items are permitted.

6. **Superseded:** An administered item with the “Superseded” status indicates that the Registration Authority has determined the item is no longer recommended for use in the community that uses this metadata registry. A “Superseded” administered item may be used but the successor item is preferred for use. “Superseded” items should include a reference to replacement items when appropriate. Only editorial edits of “Superseded” items are permitted.

Appendix F. Taxonomy Registration Form

The taxonomy developer/information architect creates the taxonomy, documents its metadata, and submits the metadata to FDR, either by entering it directly or by providing a completed registration form to the FDR registrar. FAA-STD-066 section 5.2 defines requirements for documenting taxonomy metadata.

Metadata to be supplied is, like the registration form itself, divided into two parts:

Part 1 – Administrative, descriptive, and stewardship metadata pertaining to the taxonomy as a whole

Part 2 – Metadata describing the individual hierarchical values (i.e. nodes) of the taxonomy

NOTE: Part 2 is not required if the complete set of taxonomy values is available from an external authoritative source such as Office of Management and Budget (OMB), US Census Bureau, etc.

In addition to requirements imposed by FAA-STD-066, FDR also has the following constraints:

1. Node identifiers should not contain any prefixing or suffixing whitespace characters such as spaces, tabs, etc.
2. Node descriptions should not contain any special formatting codes/characters such as MS Word line breaks, bullets, tabs, etc.
3. If special or foreign characters are needed, then the submitted file should use the UTF-8 unicode character set.

The taxonomy metadata should be provided using the following form which can also be accessed at <http://fdr.gov>. An example of a completed registration form is also included.



Form FAA-STD-066 (12/2010)

FAA Taxonomy Registration Form

Please e-mail completed form to Mojdeh Supola (ARD-300) ph. 202-385-8022, mojdeh.supola@faa.gov.

Part I - Administrative Details (Refer to Form instructions)	
1. Namespace/Taxonomy Identifier	
2. Taxonomy Title	
3. Taxonomy Creator	
4. Taxonomy Description	
5. Purpose	
6. Source Name	
7. Source Location/URL	
8. Overview of Structure	
9. Rights and Licensing	
10. Terms and Conditions (of use)	
11. Steward Name	
12. Steward Organization	
13. Submitter Name	
14. Submitter Organization	

Note: A usage example and additional comments (e.g. special circumstances of use, instructions and other notes) may be added to the Taxonomy after it has been registered in the FAA Data Registry

Form FAA-STD-066 (12/2010)

Form FAA-STD-066 (12/2010)



Form FAA-STD-066 (12/2010)

FAA Taxonomy Registration Form Instructions

PART I	
Refer to FAA-STD 066 section 5.2 Documenting Taxonomies for further details on attributes of Taxonomies to be recorded. If after entering data in a field, the data you entered appears truncated, then drag the line at the bottom of the row number down to increase the height of the row until all the entered data appears.	
Box	Label - Instruction(s)
1.	Namespace / Taxonomy Identifier - Record the taxonomy identifier, which is identical to the taxonomy's namespace. (Required)
2.	Taxonomy Title - Record the name given to the taxonomy by which the taxonomy is known. (Required)
3.	Taxonomy Creator - Record the name of the person, organization, or service primarily responsible for developing the content of the taxonomy. (Required)
4.	Taxonomy Description - Record a brief account of the content of the taxonomy. (Required)
5.	Purpose - Record a brief description of the purpose of the taxonomy, and where and how it can be applied. (Optional)
6.	Source Name - Record the name of the source if the taxonomy was derived in whole or in part from an existing source. (Conditionally Required)
7.	Source Location/URL - Record the network location (URL) of the resource if the taxonomy was derived in whole or in part from an existing resource. (Conditionally Required)
8.	Overview of Structure - Record a brief overview of the structure of the taxonomy, either as a plain language description or as a diagram of the hierarchical relationships among the taxonomy's nodes. (Optional)
9.	Rights and Licensing - Record any statements regarding intellectual property rights (including copyright) affecting use of the taxonomy, validation routines or validation API, including licensing requirements, etc. (Optional)
10.	Terms and Conditions - Record any conditions of use, such as any requirement for registration, payment, or a legal agreement before access to any of the resources. (Optional)
11.	Steward Name - Record the name of an FDR registered user who acts on behalf of the steward organization for the approval and standardization of the taxonomy's metadata. (Required)
12.	Steward Organization - Record the name of an FDR registered organization which is responsible for the approval and standardization of the taxonomy's metadata. (Required)
13.	Submitter Name - Record the name of an FDR registered user who acts on behalf of the submitter organization for the approval and standardization of the taxonomy's metadata. (Required)
14.	Submitter Organization - Record the name of an FDR registered organization which is responsible for submitting the taxonomy's metadata for approval and standardization. (Required)
Note: A usage example and additional comments (e.g. special circumstances of use, instructions and other notes) may be added to the Taxonomy after it has been registered in the FAA Data Registry.	
PART II	
Refer to FAA-STD 066 section 5.1 for further details on attributes of Taxonomy Nodes to be recorded. If after entering data in a field, the data you entered appears truncated, then drag the line at the bottom of the row number down to increase the height of the row until all the entered data appears.	
Column	Instruction(s)
A.NODE_ID	Record a sequence of characters capable of uniquely identifying the node within the taxonomy. (Required)
B.PARENT_NODE_ID	Record the ID of the parent node to which the node is directly subordinate; Included to support information about the taxonomy structure. (Required for all nodes except the root node)
C.NODE_NAME	Record a designation of the node by a linguistic expression intended to be used by humans. (Required)
D.ALLOWED	Record an indication if the node is allowed to be assigned to or used to describe a web service and its attributes ("Yes") or that the node exists strictly to group and categorize other nodes within the taxonomy itself and cannot be assigned to or used to describe a web service and its attributes ("No"). (Required)
E.NODE_DESCRIPTION	Record a representation of the node by a descriptive statement. (Required)
NOTE: All text recorded for PARTS I and II should NOT contain word processing and control characters such as carriage returns, line breaks, tabs, bullets, etc.)	



Form FAA-STD-066 (12/2010)

FAA Taxonomy Registration Form (EXAMPLE)*(Note the entire taxonomy is not included here)*Please e-mail completed form to Mojdeh Supola (ARD-300) ph. 202-385-8022, mojdeh.supola@faa.gov.

Part I - Administrative Details (Refer to Form instructions)	
1. Namespace/Taxonomy Identifier	urn:us:gov:dot:faa:taxonomies:service-category
2. Taxonomy Title	FAA Service Category
3. Taxonomy Creator	FAA Data Governance Board (FDGB)
4. Taxonomy Description	The FAA Service Category taxonomy is a hierarchical convention that is used to categorize all FAA services. It provides a high-level enterprise-wide description of services that are required to meet either FAA's Air Transportation mission needs or the administrative, legal, technical, or managerial needs for the agency's successful operation.
5. Purpose	This taxonomy provides a single standard system for categorizing FAA services by the type of service provided.
6. Source Name	
7. Source Location/URL	
8. Overview of Structure	
9. Rights and Licensing	The taxonomy is in the public domain and may therefore be reproduced without any limitations.
10. Terms and Conditions (of use)	
11. Steward Name	Deborah Cowell
12. Steward Organization	Information Management Division
13. Submitter Name	Deborah Cowell
14. Submitter Organization	Information Management Division

Note: A usage example and additional comments (e.g. special circumstances of use, instructions and other notes) may be added to the Taxonomy after it has been registered in the FAA Data Registry

Form FAA-STD-066 (12/2010)

Form FAA-STD-066 (12/2010)

FAA Taxonomy Registration Form (EXAMPLE)				
PART II				
For each node in the taxonomy complete a row of the following: (Refer to Form instructions)				
A. ID	B. PARENT ID	C. NAME	D. ALLOWED	E. DESCRIPTION
1		FAA Service	No	A category (or conceptual grouping) of the activities performed by employees or contractors of the FAA that lend assistance to others or provide information to others to make better decisions or take necessary actions. These activities are required to either meet FAA's Air Transportation mission needs or the administrative, legal, technical, or managerial needs of the agency's successful operation.
1.1	1	Agency Infrastructure Service	Yes	A category (or conceptual grouping) of the services performed for the purpose of providing assistance or help in the use of FAA facilities (including land, buildings, utilities, and other support equipment) and systems (automated and manual). This assistance may be in the form of assisting in the upkeep of facilities, planning and responding to an emergency within a facility, or providing a system to keep track of FAA real property.
1.1.1	1.1	Agency Facility Service	Yes	A service category that describes services for the purpose of providing assistance or help in the use of FAA facilities (including land, buildings, utilities, and other support equipment) within the geographic and functional boundaries of the United States. This assistance may be in the form of: 1) assisting in the provision of services to employees, contractors, and tenants within FAA owned or operated facilities; or 2) performing tasks directly associated with the construction or acquisition of FAA facilities; and 3) performing tasks directly associated with the operation, utilization, maintenance, and disposal of these facilities.
1.1.1.1	1.1.1	Tenant Service	Yes	An agency facility service category that describes services where tenants within FAA facilities, buildings, or structures receive services that may include such things as elevator repair, paper shredding, janitorial services, etc.
1.2	1	Agency Service	Yes	A category (or conceptual grouping) of the services performed by the FAA that are focused on the administration of the agency and do not involve Air Transportation mission-related activities or information.

Form FAA-STD-066 (12/2010)

Page 1 of 4

NOTE: Only the first page of this four-page example is reproduced here for brevity.